

Title (en)
COLORED GLASS ARTICLES HAVING IMPROVED MECHANICAL DURABILITY

Title (de)
GEFÄRBTE GLASARTIKEL MIT VERBESSERTER MECHANISCHER BESTÄNDIGKEIT

Title (fr)
ARTICLES EN VERRE COLORÉ AYANT UNE DURABILITÉ MÉCANIQUE AMÉLIORÉE

Publication
EP 4230593 A3 20231122 (EN)

Application
EP 23184758 A 20220617

Priority

- US 202263347201 P 20220531
- US 202163212179 P 20210618
- US 202263318553 P 20220310
- US 202263347095 P 20220531
- EP 22741911 A 20220617
- US 2022033913 W 20220617

Abstract (en)

A glass composition includes greater than or equal to 50 mol% and less than or equal to 70 mol% SiO₂; greater than or equal to 10 mol% and less than or equal to 20 mol% Al₂O₃; greater than or equal to 1 mol% and less than or equal to 10 mol% B₂O₃; greater than or equal to 7 mol% and less than or equal to 14 mol% Li₂O; greater than 0 mol% and less than or equal to 8 mol% Na₂O; greater than 0 mol% and less than or equal to 1 mol% K₂O; greater than or equal to 0 mol% and less than or equal to 7 mol% CaO; greater than or equal to 0 mol% and less than or equal to 8 mol% MgO; and greater than or equal to 0 mol% and less than or equal to 8 mol% ZnO. R₂O + R'O is less than or equal to 25 mol%, wherein R₂O is the sum of Li₂O, Na₂O, and K₂O and R'O is the sum of CaO, MgO, and ZnO. The glass composition includes at least one of NiO + Co₃O₄ + Cr₂O₃ + CuO is greater than or equal to 0.001 mol%, CeO₂ is greater than or equal to 0.1 mol%, and TiO₂ is greater than or equal to 0.1 mol%.

IPC 8 full level
C03C 3/091 (2006.01); **C03C 3/093** (2006.01); **C03C 3/095** (2006.01); **C03C 3/097** (2006.01); **C03C 3/11** (2006.01); **C03C 3/118** (2006.01); **C03C 4/02** (2006.01); **C03C 21/00** (2006.01)

CPC (source: CN EP KR US)
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Citation (search report)

- [X] US 2020189962 A1 20200618 - DEJNEKA MATTHEW JOHN [US], et al
- [X] US 2017197869 A1 20170713 - BEALL GEORGE HALSEY [US], et al
- [X] US 2013186140 A1 20130725 - BRIX PETER [DE], et al
- [X] GB 1124001 A 19680814 - OWENS ILLINOIS INC

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
US 11667562 B2 20230606; **US 2022402808 A1 20221222**; CN 116249679 A 20230609; CN 116854366 A 20231010; EP 4164992 A1 20230419; EP 4164992 B1 20230823; EP 4164992 C0 20230823; EP 4230593 A2 20230823; EP 4230593 A3 20231122; JP 2023543103 A 20231013; JP 7472326 B2 20240422; KR 20240023516 A 20240222; TW 202337863 A 20231001; US 11655181 B1 20230523; US 11834370 B2 20231205; US 2023159374 A1 20230525; US 2023192532 A1 20230622; US 2024059604 A1 20240222; WO 2022266404 A1 20221222

DOCDB simple family (application)
US 202217843096 A 20220617; CN 202280006102 A 20220617; CN 202310783384 A 20220617; EP 22741911 A 20220617; EP 23184758 A 20220617; JP 2022580076 A 20220617; KR 20237043001 A 20220617; TW 111122560 A 20220617; US 2022033913 W 20220617; US 202318093090 A 20230104; US 202318100724 A 20230124; US 202318386703 A 20231103